



## Course Title: Elementary Linear Algebra

### Course Information

Semester & Year:	Fall 2024
Course Prefix & Number:	MAT 225
Section Number:	12993
Credit Hours:	3
Start Date:	September 3, 2024
End Date:	December 12, 2024
Room Number:	CM 453
Meeting Days:	Tuesday & Thursday
Meeting Times:	3:30 PM – 4:55 PM

### Course Format

The course format for this course is In Person with a flexible attendance (HyFlex) component using WebEx.

### Instructor Information

Instructor:	Patricia Dueck
Email:	patricia.dueck@scottsdalecc.edu
Phone:	(480)423-6594
Office Location:	CM 453
Office Hours:	MW 4:00 PM – 5:30 PM, CM 453 TTh 2:30 PM – 3:30 PM, CM 453

- Virtual office hours are the same as above at [This Link](https://meet.google.com/gdz-kwbo-vez). (https://meet.google.com/gdz-kwbo-vez) Please inform the instructor via email ahead of time if you plan on attending. She often forgets to turn on the computer during office hours.

Others by appointment.

## Course Description

Introduction to matrices, systems of linear equations, determinants, vector spaces, linear transformations and eigenvalues. Emphasizes the development of computational skills.

## Prerequisites

A grade of C or better in MAT212 or MAT213 or MAT220 or MAT221, or equivalent.

## Course Competencies

1. Apply matrices to solve a system of linear equations. (I)
2. Analyze the existence and nature of the solution of a system of linear equations using the determinant of an appropriate matrix. (I, II)
3. Use current technology to solve problems within the context of the course. (I, II, III, IV, V, VI)
4. Write the solution of a system of linear equations as a linear combination of vectors. (I, III)
5. Determine if a set of vectors forms a vector space and find a basis. (III)
6. Determine the dependence of a set of vectors. (III)
7. Identify the four fundamental subspaces of a matrix. (III)
8. Construct an orthonormal set of vectors by using the Gram-Schmidt process. (IV)
9. Find eigenvalues and eigenvectors of a square matrix. (V)
10. Define a linear transformation and its range. (VI)
11. Find the Kernel of a linear transformation. (VI)
12. Analyze linear algebra real world applications. (VII)

## Texts, Course Materials and Technologies

- **Text:** The text is a free open text available in pdf format in MOER, the course management system. [First Course in Linear Algebra by K. Kuttler](#)
- **Internet:** The ability to use the internet is required as live online through WebEx is a possible form of attendance.
- **Web Cam:** Both video and audio capabilities are necessary in order for you to attend class using WebEx

## Course Technologies

View the [Accessibility Statements & Privacy Policies](#) of technologies used in this course.

## Maricopa Systems

This course uses key Maricopa systems for course management and communication.

- Canvas Learning Management System
- Student Maricopa Gmail Account
- Maricopa Open Educational Resource Learning System (MOER)

## Synchronous Communication Tools

This course implements the use of web conferencing and/or other synchronous course tools.

- WebEx
- Google Meet

## Streaming Media/Audio/Video Tools

This course uses webcasting, lecture capture systems, YouTube, and/or other streaming media services.

- Scanner App (such as CamScanner)
- YouTube
- Films on Demand

## Student Assignment Tools

This course requires students to participate in or submit assignments using desktop or cloud-based applications.

- Google Products
- Scanner App (such as CamScanner)
- Microsoft Office

## Course Policies

First, students are also responsible for the college policies included on the [Student Regulations](#) page of the Maricopa Community College District website.

Second, there are policies that govern this specific course, MAT 221.

**Policy on Incomplete:** In order to receive an incomplete in the course, the student must have completed at least 90% of the course work and have a passing grade at the time the incomplete is taken.

**Policy on Student Grades:** Final grades are calculated using the scale listed in the syllabus. **FINAL GRADES ARE NON-NEGOTIABLE.** It is unethical to reach out at the end of the

semester and request "a few extra points" or discuss the consequences of not earning the grade you want in the class. Messages of this nature will not receive a response.

**Policy on Exams using Disability Resource Services (DRS):** Students using DRS to assist with this course are responsible for setting up any necessary accommodations prior to taking any assessments. This is only for items for which DRS is needed.

**Cell Phones and Etc.:** Upon starting class all cell phones and other objects of tech communication need to be turned off. If there is a true emergency call/text you are expecting, let the instructor know before class. You will forfeit your attendance point if your cell phone goes off during class, you are texting during class or you are using a computer to surf the internet. Of course, with live online portion of the class this cannot be policed. However, it is the smart student who has the self-control to avoid all possible distractions, and pay attention to what is going on in class.

**Note:** No audio, photos or video of class, instructor or classmates are permitted unless by special request. Photos of work on the boards permitted.

**Graphing Calculator:** A graphing calculator is required for this course. The suggested calculator is the TI-83/84. Please have the calculator for class daily. Calculators with CAS systems or QWERTY keyboards may not be used during exams.

**Calculator Rental for Students:** The Media Center will rent calculators this semester. Students must bring a copy of their schedule, a photo ID, and credit/debit card for payment. It costs \$10, and rentals must be done before 5pm.

#### **Exams:**

- 1) There will be two exams given during the semester (including the final). These exams will involve a mix of mechanical skills and conceptual reasoning. The best possible preparation for the exams is regular attendance and completion of assigned homework.
- 2) Each exam is part in-person, proctored and possibly part take-home, non-proctored exam to be completed under a time limit over a weekend. Information regarding the non-proctored portion will be explained carefully when the first exam of this type occurs.
- 3) There are **no make-up exams** for exam 1, unless you have a valid excuse accompanied with documentation or you have spoken with the instructor before the day of the exam.
- 4) You have **one week** to complete the make-up exam and you may receive a 10% reduction in points regardless of the excuse.

- 5) You may only make-up one exam per semester. The second missed exam will receive a grade of 0 (zero).
- 6) Exams are never curved.
- 7) All exams must be taken in person, in class or in the testing center

### **Homework, Quizzes & Projects:**

- 1) Homework will be assigned after each class. Students may work together on homework, but each individual student should complete and write up their own work.
- 2) Homework sets will be due every Tuesday at the beginning of class (even for those attending virtually). The HW problems will be completed on MOER.
- 3) **One** homework sets will be dropped at the end of the semester.
- 4) ***No make-up homework sets or quizzes of any kind are allowed.***
- 5) There also may be group quizzes, or different kinds of individual quizzes at other times in the semester.
  
- 6) Projects may be assigned in class at various times and may be completed in groups.

### **Final Exam:**

The final exam will be taken on December 12, 2024 during normal class time.

There will be no make-ups given for the final, and no finals will be rescheduled for personal reasons, including nonrefundable airplane tickets, but only for the reasons listed below.

### **Final Exam Make-up Policy:**

The final exam schedule listed in the Schedule of Classes will be strictly followed. Exceptions to the schedule and requests for make-up examinations can be granted only by the Department Chair and for one of the following reasons:

1. religious conflict (e.g., the student celebrates the Sabbath on Saturday)
2. the student has more than three exams scheduled on the same day as the math final
3. there is a time conflict between the math final and another final exam.

If there is a last-minute personal or medical emergency, the student may receive a grade of Incomplete and make up the final within one calendar year. The student must provide written documentation and make up the final within one calendar year. See note at the beginning of the syllabus. The student must provide written documentation and be passing the class at the time to receive an Incomplete. Make-up exams will NOT be given for reasons of nonrefundable airline tickets, vacation plans, work schedules, weddings, family reunions, and other such

activities. Students should consult the final exam schedule before making end-of-semester travel plans.

### **Student Expectations:**

Students are expected to be courteous, respectful and empathetic to peers and instructor. Be in class on time, be prepared for class, participate in class activities, follow assignment instructions, effectively complete assignments and turn them in by the appropriate due dates. You are also expected to maintain knowledge of your grade standing and contact the instructor if concerns arise. Students are also responsible for all college policies included in the college catalog and the student handbook.

## **Generative Artificial Intelligence (AI) Policy**

### **Opening Statement Regarding Generative Artificial Intelligence (AI)**

The World Economic Forum defines generative AI as “a category of artificial intelligence (AI) algorithms that generate new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of images, text, audio, and more.”

Some examples of generative AI tools include but are not limited to: ChatGPT, Google Bard, Microsoft Copilot, Stable Diffusion, GrammarlyGo, and Adobe Firefly.

### **No Generative Artificial Intelligence (AI) Allowed**

In this class, all work submitted must be your own. The use of generative AI tools will be considered academic misconduct (see Administrative Regulation 2.3.11 1.B(b)) and will be treated as such. If you are unsure if the tool or website you are using is a generative AI tool, please contact the instructor for further clarification before using the tool or website.

## **Grading Standards & Practices**

## Grade Scale

Letter Grade	Points Range
A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	0 – 59%

## Percent Allocation

Each Exam	35%
HW Sets	30%

## Attendance Policy

- Attendance is expected.
- You are to be in class every day it is scheduled.
- You may be dropped after three absences.
- You are expected to be in class on time.
- You are expected to stay the full length of class once you come to class.
- If you have a legitimate need to leave class early, please notify your instructor before class starts.
- You may attend class 5 times virtually. So, if you are ill or running very late you can attend class virtually.
- Just showing up and warming a chair is one point every day.

## Assignments (Homework)

Please see the Syllabus page on our Canvas course for the list of Homework problems and the course schedule. You have to attend class to be able to turn in homework. If you are attending class virtually on the day homework is due, you will complete it at home, scan it and submit it to Canvas at start of class.

## Assigning of Grades

Your grade is NOT a commodity; it has not been purchased with your tuition. You have the right to be graded fairly, but you do NOT have the right to any specific grade. Your grade is not a reflection of you as a person. Your grade is not a measurement of effort. Your grade is an evaluation of PERFORMANCE. This means it is dependent upon how well you demonstrate your comprehension of the subject through application and completion of the items listed above and below in this syllabus.

## **Response Time**

Students can expect a response time of 72 hours for the instructor to respond to messages sent via the Canvas Learning Management System or email. Students can expect assignments to be graded within 14 days of the assignment's due date.

## **Instructional Contact Hours (Seat Time)**

This is a four (4) credit-hour course. Plan to spend at least four hours on course content or seat time (direct instruction) and 8 hours on homework weekly. Accelerated courses will require additional time per week.

## **Tutoring**

### **The Math Tutor Center**

The Math Tutor Center offers in-person as well as remote tutoring to students currently enrolled in mathematics courses at SCC. Remote tutoring is being offered online via Google Meet and can be accessed via computer or phone.

[Click Here](https://www.scottsdalecc.edu/students/tutoring/math) (<https://www.scottsdalecc.edu/students/tutoring/math>) to find out how and when to reach a free SCC Math Tutor!

### **Non-SCC Tutoring Service (use as last resort)**

As much as possible, it is highly recommended that you first utilize your professor then use the SCC Math Center tutors since they are familiar with SCC coursework, instructor expectations, and assignments; however, if you need to work with a tutor outside regular Math Center hours, you have access to a 24/7 online tutoring service called Brainfuse. You may utilize up to 6 hours of online tutoring through Brainfuse per semester and have the option of requesting additional time if needed.

To access Brainfuse and begin working with a tutor:



1. Visit the [SCC Online Tutoring Services Through Brainfuse](https://www.scottsdalecc.edu/students/tutoring/online-tutoring) page (<https://www.scottsdalecc.edu/students/tutoring/online-tutoring>)
2. Click the **Visit a tutor online** button
3. Enter your MEID and password
4. Choose your topic and subject
5. Click the **Connect** button

Please use your time effectively and be prepared with your questions before you connect to a tutor. Tutors and students communicate in real-time so whatever you type, draw, or share on the screen, the tutor sees, and vice versa. You may also want to have screenshots ready if applicable. All Brainfuse sessions are recorded for review later.

## Learning Tools and Your Privacy and Security

SCC utilizes a variety of software applications and web-based tools operated by third party vendors to support student learning. To allow student access to the application, site or tool, certain identifiable information may be required to establish a user name or password, and submit work and/or download information from these tools. Inherent with all internet-based tools, there is a risk that individuals assume when electing to use these tools, as they may place information at risk of disclosure.

To use learning tools responsibly, please observe all laws and the Maricopa Community College District [Student Conduct Code](#), such as copyright infringement, plagiarism, harassment or interference with the underlying technical code of the software. As a student using a learning tool, you have certain rights. Any original work that you produce belongs to you as a matter of copyright law. You also have a right to the privacy of your educational records. Your contributions to learning tools constitute an educational record. By using the tool, and not taking other options available to you in this course equivalent to this assignment that would not be posted publicly on the internet, you consent to the collaborative use of this material as well as to the disclosure of it in this course and potentially for the use of future courses.

Students are responsible for the information contained in this syllabus, the Syllabus page in your Canvas course and the **College Policies & Student Services** page found in the First Steps module of your Canvas course. Students will be notified by the instructor of any changes in course requirements or policies.